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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,757	12/30/2003	Khosro Shamsaifar	WJT08-0059 (JSF001-0008)	2735
7590 11/10/2005 William J. Tucker 14431 Goliad Dr. Box #8 Malakoff, TX 75148			EXAMINER HAM, SEUNGSOOK	
			ART UNIT 2817	PAPER NUMBER

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/748,757

Applicant(s)

SHAMSAIFAR ET AL.

Examiner

Seungsook Ham

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 12-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 12-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 and 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitazawa et al. (JP '403) in view of Liang et al. (US '883) or Toncich (US '251).

Kitazawa et al. (figs. 1-3) discloses a coaxial combline filter comprising: a plurality of coaxial combline resonators 10a, 10b; at least one of the plurality of coaxial resonators includes at least one metallized through-hole 12a, 12b; an input/output coupling metallization 14a, 14b on a surface of the plurality of coaxial resonators; and an iris with an aperture connecting the plurality of coaxial resonators 15a, 15b.

Although Kitazawa et al. is silent as to whether the coaxial resonators are made of high dielectric material (e.g., ceramic), it is inherent from the device of Kitazawa et al. that the dielectric material is made of ceramic material since it Kitazawa et al. teaches the dielectric filter is used in a high frequency circuit (see abstract), and also it is well known in the art that a ceramic filter is used in a high frequency circuit. Alternately, it would have been obvious to one of ordinary skill in the art to use ceramic material as the dielectric material in the device of Kitazawa et al. since it is well known in the art to use ceramic material in a dielectric coaxial resonators/filter to reduce the size of the filter (see Toncich, col. 14, lines 5-11, and lines 43-48).

Kitazawa et al. does not show at least one voltage tunable dielectric varactor associated with the plurality of coaxial resonators.

Liang et al. discloses a tunable filter having voltage tunable dielectric varactors (figs. 8 and 9) coupled to resonators (different types of resonators can be used, col. 6, lines 35-44) for fast tuning, low insertion loss and high Q values, etc. (col. 6, lines 35-67). Moreover, Liang et al. teaches tunable duplexers/filter could be used to replace fixed duplexers/filters to cover larger frequency band and provide better selectivity (col. 1, lines 41-60 and col. 9, line 63 – col. 10, line 6). Furthermore, Liang et al. shows a tunable dielectric film 106 on a low dielectric constant substrate 102 (figs. 8 and 9).

Toncich (figs. 1a, 1b and 6-8a) also discloses a tunable filter having voltage tunable dielectric varactors 410a, 410b coupled to resonators 404, 408 (e.g., coaxial resonator, col. 14, lines 43-51) for low insertion loss (col. 3, lines 4-11). Toncich also teaches the problem of fixed tuned filter and suggests using tunable filter to overcome the fixed tuned filter (col. 2, lines 56-67). Furthermore, Toncich shows a tunable dielectric film 16 on a low dielectric constant substrate 12 (fig. 1b).

It would have been obvious to one of ordinary skill in the art to provide a voltage tunable dielectric capacitor of Liang et al. or Toncich coupled to resonators in the device of Kitazawa et al. to tune filter frequency for fast tuning, low insertion loss, high Q values as taught by Liang et al. (col. 6, lines 35-67 and col. 10, lines 20-35) or Toncich (col. 3, lines 4-11).

***Response to Arguments***

Applicant's arguments filed on 10/13/05 have been fully considered but they are not persuasive.

Applicant argues that none of the cited art do not teach or suggest at least the element, "resonators including coaxial cavities filled with high dielectric constant material" (see REMARKS, p. 9). The examiner respectfully disagrees.

Although Kitazawa et al. is silent as to what type of dielectric material is used for the coaxial resonators 10a, 10b, it is the examiner's position that the device of Kitazawa et al. inherently uses ceramic material as the dielectric resonator since it teaches the dielectric filter is used in a high frequency circuit such as wireless devices, such as a portable telephone (which is the identical to the applicant's invention). Alternately, it is well known in the art to use ceramic material in a dielectric filter to reduce the size of the filter in a high frequency circuit and provide a high Q factor. Moreover, Toncich (col. 14, lines 5-11, and lines 43-48) teaches such advantage of using the ceramic coaxial resonators/filter. Therefore, it would have been obvious to use ceramic material as the dielectric material in the device of Kitazawa et al. since ceramic coaxial resonators/filters are well known in the art or to reduce the size of the filter (see Toncich. Heine and De Muro et al. (see art of record below) are cited to show using ceramic material as a dielectric coaxial filter is well known in the art.

Moreover, Applicant argues that Kitazawa et al. does not show using voltage tunable dielectric varactors nor Liang et al. and Toncich using voltage tunable dielectric varactors in a block filter (see REMARKS, p. 10). The examiner respectfully disagrees.

Art Unit: 2817

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found **either in the references themselves or in the knowledge generally available to one of ordinary skill in the art**. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Liang et al. or Toncich clearly teaches using a voltage tunable dielectric varactor in a dielectric filter. Liang et al. (col. 6, lines 38-45) teaches using a voltage tunable dielectric varactor in a dielectric resonator cavities (e.g., dielectric coaxial resonators/filter). Toncich (col. 14, lines 5-11, and lines 43-48) teaches using a voltage tunable dielectric varactor in a ceramic coaxial resonators. Toncich also clearly teaches using the voltage tunable dielectric varactor in a block filter ("monoblock" resonator/filter, see col. 14, line 8). Moreover, Liang et al. and Toncich clear teaches the benefits of tuning filter over fixed filter as well as using a voltage tunable dielectric varactor (see 35 USC 103 rejection above).

In response to applicant's argument for "unexpected benefits...without a great deal of experimentation and research development" (see REMARKS, p. 10) is not persuasive since the applicant failed to provide any physical evidence to support such argument.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

De Muro et al. (US '533, col. 2, lines 29-39) and Heine (US '654, col. 1, lines 51-62) disclose a ceramic coaxial filter using in a high frequency circuit for reducing the size of the filter.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (571) 272-2405. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:00PM.

Art Unit: 2817

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Seungsook Ham  
Primary Examiner  
Art Unit 2817

sh  
October 31, 2005